

## Frequently Asked Questions Conditional Growth Index (CGI)

### What is the Conditional Growth Index (CGI)?

The Conditional Growth Index, or CGI, is a normative growth metric that was re-introduced in the 2011 NWEA RIT Scale Norms Study. This metric shows how student growth compares to the growth of students across the nation, and allows for growth comparisons to be made between students performing at different points on the achievement distribution, and across different grades and subject areas.

The CGI is a standardized metric, or z-score, that provides context for how much growth a student showed compared to his or her growth projection.<sup>1</sup> A CGI score can be translated into a percentile rank to provide normative information about how student growth compares to the growth of other students across the nation.

Expressed as standard deviations units, a CGI score of zero indicates a student showed the same amount of growth as his or her growth projection. Positive CGI scores (greater than zero) indicate that a student exceeded his or her growth projection, whereas negative CGI scores indicate that a student's growth was less than his or her growth projection. Specifically, a CGI score of 1.0 for example, means a student showed one standard deviation of growth more than his or her growth projection. Conversely, a student with a CGI score of -1.0 would mean the student showed growth one standard deviation less than his or her growth projection.

### How is the CGI calculated?

The CGI is calculated using three key pieces of information: (1) A student's observed Fall to Spring gain, (2) a student's growth projection (based on the student's grade, starting RIT score, and subject being tested), and (3) the standard deviation of Fall to Spring growth for a student's "academic peers."<sup>2</sup>

To calculate the CGI, the first step is to subtract a student's observed Fall to Spring gain from his or her growth projection. This difference is referred to as the student's **Growth Index**. So, if a 2<sup>nd</sup> grade student in math started the year with a RIT score of 163, then his Fall-to-Spring growth projection would be **15 RIT points** (based on the mean growth of similar students across the nation). If the student ended the year with a RIT score of 182, then his observed gain would be **19 RIT points** (182 minus 163). As a result, this student would have a Growth Index score of **4 RIT points** (19 minus 15).

The second step is to divide the Growth Index score for this student by the standard deviation of growth. For this example student in 2<sup>nd</sup> grade math, the standard deviation of growth is **6.53**; thus, the student's CGI score would be **0.61** (4/6.53).<sup>3</sup>

---

<sup>1</sup> A student's growth projection is the gain we might expect to observe for that student based on his or her starting RIT score, grade, and the subject in which that student was tested. This growth projection represents the mean growth of similar students across the nation.

<sup>2</sup> A student's academic peers are those students in the same grade who attained the same starting RIT score in the same subject.

<sup>3</sup> The calculation is based on the default instructional weeks (Weeks 4 and 30) and a standard error of measurement (SEM) of 2.9 at both test terms.

### What does a CGI score of 0.61 mean?

A CGI score of 0.61 means the observed gain for a student (19 RIT points) was 0.61 standard deviations greater than the growth projection (15 RIT points) for that particular student. A CGI score of 0.61 would translate to growth at the 73<sup>rd</sup> percentile compared to our nationally representative norming group.

### Why can't I just use the Growth Index to compare student growth (since the growth index is included on the ASG reports)?

The Growth index is a useful metric for understanding how much growth a student showed compared to his or her growth projection. However, the Growth Index should not be used for comparison purposes because of the variation in observed student gains across grades and subjects, and between students at different achievement levels. For example, we expect to see a larger amount of raw gain over the course of a school year for a 1<sup>st</sup> grade student who starts the year at the 20<sup>th</sup> percentile in math compared to another 1<sup>st</sup> grade student who starts the year at the 80<sup>th</sup> percentile in math. These variations may be even more substantial across different grade levels and subjects, and limit the utility of using the Growth Index in computing aggregate statistics.

Because of these variations in gains (also referred to as variations in the “spread” of gains), it would be inappropriate to use the Growth Index for comparisons between students. The CGI accounts for these variations by **standardizing** individual student gains,<sup>4</sup> allowing for appropriate comparisons to be made between all students, regardless of the students' grade, starting achievement level, or the subject being tested.

### Where can I find a student's CGI score?

At present, this metric is only included on the Achievement Status and Growth (ASG) Calculator that is available for download from the Reports website under the [Norms Study Resources page](#). We recognize that schools or districts may want this CGI available in more ways than just the ASG calculator. Since the CGI is new, we are still in the process of determining the best way to make this metric more readily available, and are exploring ways of integrating this metric into standard reporting. Stay tuned for more information on this in the future.

### Can CGI scores be averaged?

Yes, CGI scores can be averaged across all students, regardless of the achievement level, grade, or subject of the students.

### Does the ASG calculator produce a growth percentile ranking for a student's CGI score? How about for groups of students?

Yes, the ASG calculator produces a growth percentile ranking from a student's CGI score. This percentile rank is useful in understanding how the growth of an individual student compares to other students across the nation.

At this time, percentile ranks can only be calculated for individual students in the ASG calculator. However, if you wish to calculate the percentile rank for a group of students, such as a classroom, the calculation is fairly straightforward. First, simply average the CGI scores for all of the students within the group (**Average CGI**). Then, in Microsoft Excel, simply include that average CGI score in the following formula:  $=(\text{NORMSDIST}(\text{Average CGI})) * 100$ .

---

<sup>4</sup> See the response in this FAQ to the question “How is the CGI calculated?” for a description of this standardization process.